NEW DISCOVERIES ALL OVER THE EARTH

The New Plan To Give Us JUST WHAT WE PAY FOR

Dishonest Manufacturers to Be Forced to TELL When They Put TIN in "Pure Silk," Sell Cotton SHODDY for "All Wool" and Make Shoes with PAPER SOLES

WHY the soles of a pair of shoes will sometimes "melt away" when caught in the rain; why "woolen" clothing sometimes gives no more warmth than cotton; why "pure-silk" dress goods crack, and a lot of other interesting information of a like nature is being revealed in Washington in connection with the proposed "Pure Fabric" legislation.

There are several bills now before Congress, the general object of which is to compel the branding of all merchandise in the same way that food and drugs are now compelled to be branded under the "Pure Food Law."

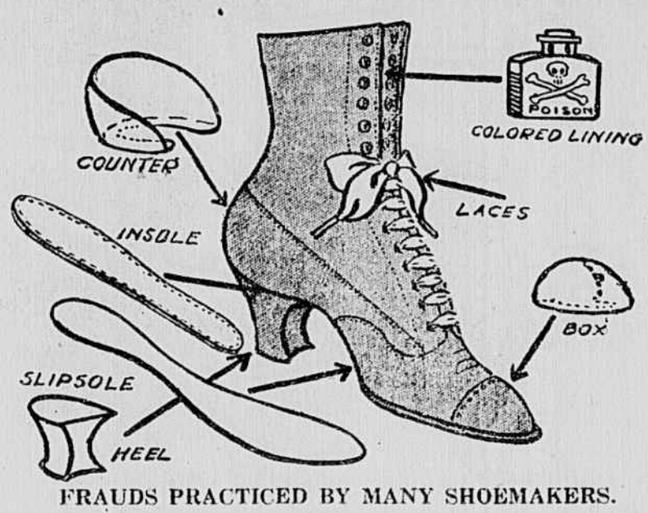
To find out just what kind of a law will best meet the situation and put an end to the merchandise frauds of which the public has long been the victim, a subcommittee of the Committee on Interstate and Foreign Commerce of the House of Representatives is now hearing testimony on both sides of the question.

One of the bills in question was introduced by Representative Campbell, of Kansas, and in explaining it to the sub-committee he made some very interesting revelations.

"Every shoe dealer knows," he declared, "that many shoes are sold that are made of a split leather or of a leather that is braced up with some sort of treatment that breaks down just as soon as it gets wet.

"The soles of many shoes are toned up with some sort of treatment that makes the sole look firm and sound until it gets wet, then it becomes soft and absorbent and is a source of cold and damp feet, resulting many times in serious illness to the wearer. In addition to that, manufacturers put out shoes that have instead of leather a product similar to paper for the insoles.

"This last Spring I purchased from one of the most reputable dealers in this town a pair of shoes for my little girl. They looked good, and I paid a price for them that ought to have procured a substantial, good-wearing pair of shoes. As a matter of fact, the second day the child wore the shoes she was caught in the rain, and the next time she put the shoes on, the soles absolutely melted away.



FRAUDS PRACTICED BY MANY SHOEMAKERS.

In Many Shoes Sold for "All Leather" the Counters, Boxes or Toe Caps, Insoles and Slip Soles Are Made from Compositions of Paper, Straw, Rags, etc., Which Sometimes Do Not Contain Even a Few Shavings of Real Leather. Poisonous Dyes Are Used to Color Linings and Cloth Tops. Laces Sold as "Silk" Are the Cheapest Cotton. High Heels Are Made of Wood, Covered with a Thin Coating of Imitation Leather.

"Our child was caught out a mile away from home in the rain with this pitiably poor substitute for a shoe. The shoe gave way and the child took sick as the result of wet feet from wearing a shoe that was not what it purported to be.

"I contended that a reputable manufacturer would hardly dare put his name on that sort of a product, and if he did put his name on that sort of a product in connection with a statement as to what it was made of, he would not very long do business as a shoe manufacturer."

The Congressman referred to the fact that buggies are sometimes advertised in catalogues for $40, the advertisement stating that the buggy in question is just like those you pay $85 for in the local market. The dupe sends in his $40. The buggy comes. It has no name on it. In about three weeks the paint begins to come off, and in three months the wheels, and then the young man who expected to have a buggy that would last him a year or two has a broken-down buggy that was not worth 40 cents in the first place, and he does not know where to go to have his wrongs righted.

Similar frauds are widely practised in the case of pianos. It has been discovered, the Congressman pointed out, that pianos were put up in poplar boxes instead of the kind of hardwood usually used in the construction of pianos.

"Cheap, worthless pianos are yearly placed upon the market at a cost to the public of millions of dollars," he declared, "and the public is absolutely defrauded of this, all because the name of the maker of that piano is not placed upon it."

That millions and millions of dollars are taken from the public every year with spurious articles of jewelry that are sold for gold, but do not contain even a wash of the precious metal, was another charge.

Congressman Lindquist, author of another bill aimed at merchandise frauds of this character, had some interesting revelations to make.

"Perhaps there are no commercial products on which there is a greater swindle," he declared, "than in the clothing industry. It is a known fact that many manufacturers have deliberately placed a label on cotton mixed and shoddy goods, stating that the goods were all wool. Such a label naturally enables the merchant to sell the goods at a higher price than would be possible if that same garment were properly labelled, because the average person cannot detect the quality from which a suit of clothes is made."

He displayed a piece of staple serge which is commercially known and sold by many merchants as pure wool. He had had it tested in laboratory, and the result showed that the supposed "wool" cloth contained 32.14 per cent cotton and only 59.74 per cent wool. Congressman Lindquist pointed out that the laboring people of this country are purchasing clothing made from this quality of serge and in most cases are paying $5 more for the suit simply because it is woven to imitate a high-grade pure worsted. He contended that if the manufacturer were compelled to put a label on this piece of goods showing that 32 per cent of it was cotton he would not be able to exact wool prices for it.

The Congressman also exhibited a piece of silk bought in one of the large New York stores. It had every appearance of being made of pure silk, but according to chemical tests it was only 65 per cent silk. If this silk had been genuine, as claimed, it could have been packed away in a trunk for fifty years without the least sign of deterioration, whereas silk of this character often cracks three months after its manufacture.

The weighting of silk, the Congressman pointed out, is accomplished by what is called a weighting bath. This bath is the most important one in the dyeing of "weighted silks," as the manufacturer can regulate the weight of the silk by the addition of tin crystals so as to increase the weight of the silk to an astonishing degree. The proportion of tin crystals used is regulated by the number of iron baths that have been previously given the silk; if two baths of iron have been given, 5 per cent of tin crystals is used; if four baths, 10 per cent, and so on.

Just why this is so is something of a mystery. All that is known is that by reason of some peculiar quality possessed by silk it is enabled to combine with iron and tin, and that exposure to the air after the bath fixes these chemicals permanently upon the fibers, thus increasing their weight to almost any extent. Silk, according to its quality and weight, will take up these substances from 50 to 200 per cent without creating much suspicion in the mind of any one but an expert.

Instances have been known in which silk has been increased nine times its own weight. Some skein silk is made from pure cotton and wood pulp.

In the case of linen, Congressman Lindquist pointed out, frauds are almost universal. Few people can determine the difference between a fine piece of cotton and pure linen. The most frequent fraud in the selling of linen is found to be in the mixing of cotton and linen in such a way that only the shrewdest expert can detect whether the article is adulterated or not. Linen goods are also loaded with starch and clay in the same manner as cotton goods.

In discussing leather frauds, which cost the public millions of dollars annually, he showed that not only is leather "loaded" with glucose and epsom salts, but the substitution of leather is a big item in the swindle. There are four parts of the shoe that are most commonly counterfeited, namely, the heels, counters, insteps and slip soles. These parts are usually substituted with one of five different compositions, as follows:

Leatherboard, which is made from a mixture of about 95 per cent leather scraps and 5 per cent paper or rags. It is reduced to a pulp and made into sheets in the same manner that cardboard is made.

Hideite, the material of which is similar to leatherboard, but it is said to be treated by a chemical process which makes it less susceptible to moisture, will disintegrate and crumple quickly upon being soaked in water.

Strawboard: This is a cheap paper board made from paper, straw, rags, etc., which are macerated and reduced to a pulp. It is then rolled into sheets and dried. No leather scraps are used in it. This material is very porous and disintegrates very quickly upon being soaked in water.

Pate: This material is manufactured from thin shavings of sole leather or belting leather. These shavings are pasted together and compressed. This material will not resist water. There is a lower grade of pate, which contains no leather.

Chrome pate: This material is made from the skivings or shavings of chrome leather pasted together and compressed. The pate previously described is made from bark-tanned skivings.

Why HEADACHE "CURES" Make You TURN BLUE

ACETANILID, antipyrin and phenacetin are very commonly used in the preparation of mixtures intended for the relief of headache and other minor aches and pains. These drugs are white powders with comparatively little taste, and are known as coal-tar products for the reason that they are obtained indirectly from coal tar and possess the characteristics of the derivatives of that substance.

According to the experts of the United States Bureau of Chemistry, the unfavorable symptoms produced by these drugs affect principally the heart and circulation and through them other parts of the body.

The symptom which occurs most frequently in poisoning by these drugs is blueness of the skin. If the dose taken has not been large, the discoloration may be very slight and may affect only a small portion of the body. Thus, in some persons who habitually use headache medicines containing these drugs, all that may be noted is an occasional blueness of the lips and mouth, and possibly of the nails and finger tips. If, however, the doses are larger or are taken more frequently, the blueness may affect the skin of the whole body.

This peculiar effect was first noticed by the physicians who administered these remedies in much larger doses than is now customary, but little attention was paid to do it, as it appeared to be only a passing effect. Since then, however, it has been learned that the bluing of the skin is not a harmless manifestation, but is due to destructive changes in the blood which are the direct result of the use of the drug, and that it is accomplished by impoverishment of the blood. Hence, those who take these remedies habitually often suffer from "anemia," or thin blood, and the symptoms which usually accompany this condition—pallor, shortness of breath, palpitation of the heart, muscular weakness, disinclination to make any exertion, etc.

The injudicious use of these remedies also has a harmful effect upon the heart, thus tending to exaggerate the symptoms above mentioned. In addition, it may give rise to other ill effects which arise from weakness of the circulation, and may often produce death.

It has long been known that most of the drugs in headache mixtures are habit-forming drugs. The habit is usually acquired through the use of the remedy for headaches and minor pains. Troubles of this kind are peculiarly likely to return again and again, and as the remedy has but a temporary effect the dose must be repeated. In time the patient may easily become dependent upon the drug.

Furthermore, the ache or pain for which the medicine was first taken is often worse than ever after the effects of the remedy have passed away, because of the weakened condition of the system which may result from the use of these agents, and hence there is additional call for the remedy. Thus a habit may be established—more drug, impaired bodily health, lessened resistance, more pain, more drug.

What to Do When Your Eyes Go Wrong

A "COLD" in the eye—most annoying and liable to be expensive.

You get up in the morning, look in the glass, and find that one of your eyes—or maybe both—looks much inflamed. If you do nothing about it, the condition may not pass away for a number of days, and meanwhile you are more or less disabled.

Very possibly, in some alarm, you go to see the oculist. He frightens you at once by telling you that it is "conjunctivitis"—a long word which means simply inflammation of the membrane that covers the eye. He puts some drops in the eye, and tells you to come back the next day. You are finally cured, and the bill comes to $15 or $25.

That is all well enough. Perhaps you don't mind the bill, or the trouble of going to the doctor's. But it is likely that you would be less satisfied if you knew that you could easily have cured yourself much quicker and without any expense at all.

If you have a "cold" in your eye, you can get rid of it within a few hours by bathing the eye freely and often with a solution made by putting *two drops* of formaline into a teacupful of water.

The formaline you can buy at any drugstore. It may be used with an eye-dropper or an eye-bath—either of which can be had from the drugstore. But it is even more effective to allow somebody else to pour it into the eye by squeezing again and again a rag or piece of cotton saturated with it.

A "cold" in the eye is nothing in the world but a germ infection. Formaline kills the germs.

But don't use formaline in any stronger solution than two drops to the teacupful. If you get it into your eye in a pure state, you might destroy the sight. At the least, you would suffer frightful pain.

Incidentally it may be said that the best eye-water known to oculists for the treatment of sore eyes or lids is made by mixing ten grains of boracic acid and five grains of tannic acid with one drachm of camphor water and enough ordinary water to make a total of one ounce. The ingredients are cheap, purchased from the apothecary, and you can prepare them yourself if you care to.

How WOMEN Lost Their BEARDS

PREHISTORIC man may have starved and beaten his mate and abused her in a thousand ways, but for one thing at least woman of to-day should be everlastingly grateful to the brute men of the past—they saved her from the nuisance of shaving.

There is an old saying that a humpback is a misfortune, a clubfoot is a deformity—but whiskers are a man's own fault. This is true because man can remove them, but it is not his fault that they persist in growing long after he is bald-headed.

There was doubtless a time, 50,000 or 100,000 years ago, when women had as much hair on their faces as men. The sexes had not specialized to such an extent as at present, and their differences were much less noticeable in all ways.

Ideas of beauty were doubtless crude, if they existed at all. If woman had any notions on male good looks they counted for nothing, as he and not she did the choosing. Through all the ages man has had one firmly fixed idea regarding desirability in women. They must have youth.

In stealing or purchasing a bride the cave man invariably chose a young girl. Whiskers are the most noticeable sign of maturity, and when a young woman's face became fuzzy her chance of obtaining a husband was gone.

Women who developed beards early in life were sure to be spinsters, while those whose facial hair sprouted late or feebly had an excellent chance. In fact, they were married whether they liked it or not.

Through the generations man weeded out the bearded women, while there was nobody to perform the same cruel but kind service for him. He did his work so thoroughly that we now pay to see the occasional "throw-backs" known as the "bearded ladies." Quite often these are men dressed up as women.

NEW LIGHT on the Mystery of PAIN

A NOVEL series of experiments has thrown new light on the mystery of pain. We don't mind any sensation while it is novel, but sufficient repetition of anything—music, jokes, food or drink—becomes intolerable. A nerve is apparently the same way. The first sensation, no matter how violent, cannot be painful. For instance, when we are slashed with a knife, the first sensation is of cold—then comes the pain. Even an intense sensation can be endured if instantly relieved by a long interval of rest.

We can touch hot things and remove our hands quickly enough so that there is no sense of pain. Yet if we do it often enough we will find our fingers blistered. Sunburn and chapped skin result in the same way without our feeling any pain while the damage is occurring.

A drop of water falling on the skin occasionally causes no pain. Yet one of the tortures of the Inquisition consisted in allowing water to drip on a prisoner's head for hours at a time. The repetition of even this mild sensation soon becomes agony. When we burn our hand the sensations of heat follow one another with such extreme rapidity that it takes a very short time to reach the stage of pain.

Cocaine will sometimes make us insensible to pain, and yet sensible to touch, taste or smell. It is supposed that the cocaine allows the nerves to transmit sensations intermittently with sufficient intervals to prevent them from reaching the stage of pain.

The cornea or transparent portion of the eye presents a problem. If you touch the cornea ever so gently the result is pain. The explanation would naturally be that the nerves of the cornea transmit sensations so rapidly that they always cause pain. But this is not so. If air is blown in a fine stream against the cornea the feeling is not of touch nor of pain, but of cold.

Deep, dull sounds like thunder, drums and cartwheels tend to deaden pain. High sounds and bright lights, particularly red, increase sensitiveness to pain. Everything hurts most at the moment of awakening in the morning, and least of all in the afternoon.

How Birds FIND THEIR WAY HOME Better Than You Can

SOME persons are always "getting turned round" when they step out of subways or theatres; others rarely, if ever, "lose their bearings," even in the most confusing surroundings. The cause of this difference in people lies in their childhood training. Those who are easily confused should blame their parents and teachers for it.

There are two methods by which creatures keep their bearings. One is by keeping in mind the points of the compass. This may be done by actual use of a compass, as on the ocean, or in deep forests, or by noting stars or the sun.

The second method ignores the points of the compass and relies on a single point, the starting point. This is the natural method used by birds, insects, fish, as well as four-footed animals and savages. Only more or less civilized man uses the points of the compass, and he usually used them clumsily. Indeed, men often become hopelessly lost through their inability to make use of the compass they have with them.

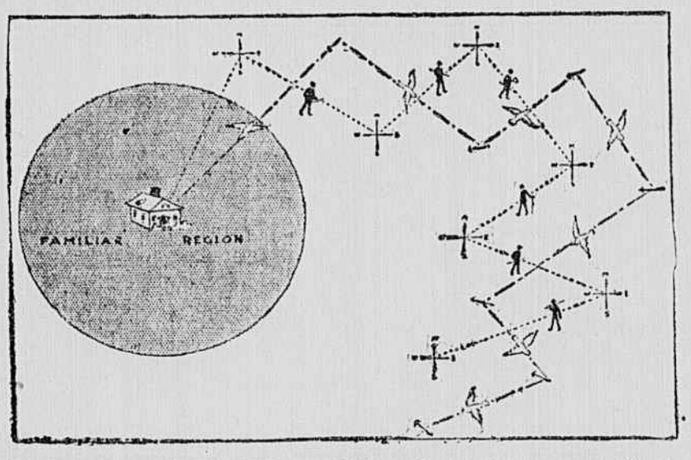


Diagram Illustrating the Different Methods Used by Birds and Civilized Men in Finding Their Way Home Through Unfamiliar Territory. All Man's Knowledge Does Not Make Him so Good a Pathfinder as the Bird's Instinctive Geometry Does.

The remarkable feature of the natural method is the amount of instinctive geometry it involves. A bird or fish will travel through unfamiliar territory, changing its direction many times, and yet when it wants to go home it will head for it on a "bee line."

As long as the creature keeps on a straight line he has only to face about in order to find his way home. As soon as he changes his course a problem of geometry is involved. With each turn the problem becomes more and more complicated and the strain on the memory more surprising.

It may be this subconscious strain on the memory that brings animals back to their starting points. Or it may be that with each turn the creature makes its muscles instinctively register in the brain the exact amount of deviation from the air-line home.

Foxes and wolves have a central point, either the place of their birth or a cave or burrow where they have spent considerable time. Even when this becomes unhabitable they are known to appear periodically, gaze at it and whisk off again. Children would all take to the natural method and do pretty well with it if it were not for their early training regarding the points of the compass.

Recent experiments have shown that persons who have what is known as a "bad sense of direction" have also "imaginary maps" in their minds. An imaginary map is really a set of false ideas as to where they are.

Ask a person to make a pencil mark representing the place he is in, and then indicate the direction of other cities, and even distant buildings and streets in his own town. If these points are fairly accurate you may be sure that this person is not one who is easily confused no matter where he is.

With as many as 30 per cent you will find the maps are ridiculous. Many people don't really know which way the centre of the town lies or the grocer's. To many persons Chicago is west of New York, and San Francisco still farther west, but Japan and China to them are on the other side of Europe.

These "imaginary maps" which confuse us all our lives are the result of our early lessons in geography. We are taught this science long before it interests us and we talk glibly about east and north without at the same time placing them in our minds.

A geography teacher should get the points of the compass in the children's minds as regards their desks and the schoolhouse before a single map is shown. Then from time to time the teacher can test the mental map as it grows in each child's head and correct the imaginary features before they take root.

Why GREAT THINKERS Are Often ABSENT-MINDED

UNTIL now it has always been supposed that the reason great thinkers are so often absent-minded was because they are so engrossed with their scientific pursuits.

The real reason, however, seems to be an entirely different one. Dr. Gustav Fischer, of Jena, invites attention to the fact that the world's greatest thinkers, with few exceptions, were poor or indifferent pupils in their schooldays. The reason for this is that great thinkers usually have poor memories. It is extremely difficult for them to memorize.

This difficulty is so pronounced that mental arithmetic, aptitude at which depends largely on ability to memorize the multiplication tables and the results of various additions and subtractions, is an art in which no great astronomer has ever been proficient. Conversely, prodigies at mental arithmetic are rarely able to do any independent thinking, even upon commonplace subjects.

Upon the ability to memorize depends what science terms associative memory. This is the power to bring two subjects quickly into relation with each other, making for all those qualities which are now usually summarized under the popular term "efficiency."

Judged by these standards, the great thinker is woefully "inefficient." He cannot remember isolated facts quickly, nor can he remember superficially correlated facts very quickly. The joke which the average man and woman will understand very quickly the great thinker will understand very slowly, not because his attention is wandering, but because it is laborious work for him to let his associative memory recall just why the thing which is so obviously funny to the average-minded is out of perspective, or out of proper proportion, or incongruous. For, according to Bergson, laughter is occasioned only by things which are not in proper relation to each other.